

**TUNER OVERLOAD
(CTB/CSO)
DATA SHEET**

EUT #: _____ Date: _____ EUT Type: _____

(Note: System Attenuator set to 0 dB. Spectrum Analyzer
settings: RES Bw = 300 kHz, VBw = 3 MHz.)

CALIBRATING THE VM 700A

1. Verify test system as shown in Figure D _____.
2. Verify Matrix Generator is OFF _____.
3. Verify Generator 2 is OFF _____.
4. Turn on EUT and select for Channel 3 operation.
5. Set BB Generator and Modulator for Channel 3, 100 IRE _____.
6. Set Modulator Attenuator for 21.5 dB _____.
7. Normalize the baseband input to the VM 700A, 140 IRE, using the Normalizing Amplifier and the "WAVEFORM" selection on the VM 700A.
8. **Generator 2 was pre-calibrated with the System Attenuator set to 0 dB:**

- A. At each test channel, Generator 2 was set for a signal level of +15.0 dBmV at the TV input connector.

GENERATOR 2 SETTINGS

For CH. 3 ...	61.75 MHz	..... Setting	<u>33.5</u>	dBmV
For CH. 12 ...	205.75 MHz	..... Setting	<u>34.0</u>	dBmV
For CH. 53 ...	397.75 MHz	..... Setting	<u>35.5</u>	dBmV
For CH. 74 ...	523.75 MHz	..... Setting	<u>37.0</u>	dBmV

INITIAL CALIBRATION AND MEASUREMENTS:

9. Set SYSTEM ATTENUATOR set to 0.0 dB _____.
10. Set MATRIX ATTENUATOR to 10.0 dB _____.
11. Set BASEBAND GENERATOR AND MODULATOR for Channel 3, 10 IRE _____.
12. Set MODULATOR ATTENUATOR to 17.2 dB _____.
(+15 dBmV Video and +5 dBmV Aural at EUT.)
13. Adjust Generator 1 for 49.188 MHz at 0 dBmV (LO) _____.
14. Turn on Matrix channels 2 through 78 (PPP) _____.
15. Turn off Matrix channels 3 and 19(F) _____.
16. Verify (Matrix) level at TP1 = +2.5 (40 TO 550 MHz) dBmV _____.
17. Verify 61.17 MHz level at TP1 = +1.5 dBmV _____.
18. Adjust VM 700A to monitor the EUT's baseband Frequency Spectrum, Field 1, Line 16 _____.

19. From the VM 700A, measure the tuner overload channel components, and any additional products, within the baseband and record their amplitudes:

<u>FREQUENCY (MHz)</u>	<u>EMISSION LEVEL (dBmV)</u>
<u>≈ 0.08</u>	<u> </u>
<u>≈ 0.83</u>	<u> </u>
<u>≈ 1.33</u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>

20. Turn off Matrix Generator and adjust Generator 2 to inband equivalent frequencies for recorded overload components listed in STEP #19 _____.
21. Adjust Generator 2 output to match the amplitude recorded above and record Generator 2 output level:

<u>FREQUENCY (MHz)</u>	<u>GENERATOR LEVEL (dBmV)</u>
<u>≈ 61.25</u>	<u> </u>
<u>≈ 62.00</u>	<u> </u>
<u>≈ 62.50</u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>

22. Set MODULATOR for Channel 12, 10 IRE, and turn off Generator 2 _____.
23. Set BASEBAND GENERATOR AND MODULATOR ATTENUATOR to 17.7 dB _____.
(+15 dBmV Video and +5 dBmV Aural at EUT.)
24. Adjust Generator 1 for 49.2405 MHz at 0 dBmV (LO) _____.
25. Turn on Matrix channels 2 through 78 (PPP) _____.
26. Turn off Matrix channels 12 and 36 (W) _____.
27. Verify (Matrix) level at TP1 ≈ +2.5 (40 to 550 MHz) dBmV _____.
28. Verify 205.17 MHz level at TP1 ≈ +2.2 dBmV _____.
29. Adjust VM 700A to monitor the EUT's baseband frequency spectrum, Field 1, Line 16 _____.
30. From the VM 700A, measure the tuner overload channel components, and any additional products, within the baseband and record their amplitudes:

<u>FREQUENCY (MHz)</u>	<u>EMISSION LEVEL (dBmV)</u>
<u>≈ 0.08</u>	<u> </u>
<u>≈ 0.83</u>	<u> </u>
<u>≈ 1.33</u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>

44. Set MODULATOR for Channel 74 (82), 10 IRE, and turn off Generator 2 _____.
45. Set BASEBAND GENERATOR AND MODULATOR ATTENUATOR to 12.9 dB _____.
(+15 dBmV video and +5 dBmV Aural at EUT.)
46. Adjust Generator 1 for 49.25378 MHz at 0 dBmV (LO) _____.
47. Turn on Matrix channels 2 through 78 (PPP) _____.
48. Turn off Matrix channels 74 (LLL) and 89 (AAAA) _____.
49. Verify (Matrix) level at TP1 = +2.5 (40 to 550 MHz) dBmV _____.
50. Verify 523.17 MHz level at TP1 = +3.8 dBmV _____.
51. Adjust VM 700A to monitor the EUT's baseband frequency spectrum, Field 1, Line 16 _____.
52. From the VM 700A, measure the tuner overload channel components, and any additional products, within the baseband and record their amplitudes:

<u>FREQUENCY (MHz)</u>	<u>EMISSION LEVEL (dBmV)</u>
≈ 0.08	_____
≈ 0.83	_____
≈ 1.33	_____
_____	_____
_____	_____
_____	_____
_____	_____

53. Turn off Matrix Generator and adjust Generator 2 to inband equivalent frequencies for recorded overload components listed in STEP #52 _____.
54. Adjust Generator 2 output to match the amplitude recorded above and record Generator 2 output level:

<u>FREQUENCY (MHz)</u>	<u>GENERATOR LEVEL (dBmV)</u>
≈ 523.25	_____
≈ 524.00	_____
≈ 524.50	_____
_____	_____
_____	_____
_____	_____
_____	_____

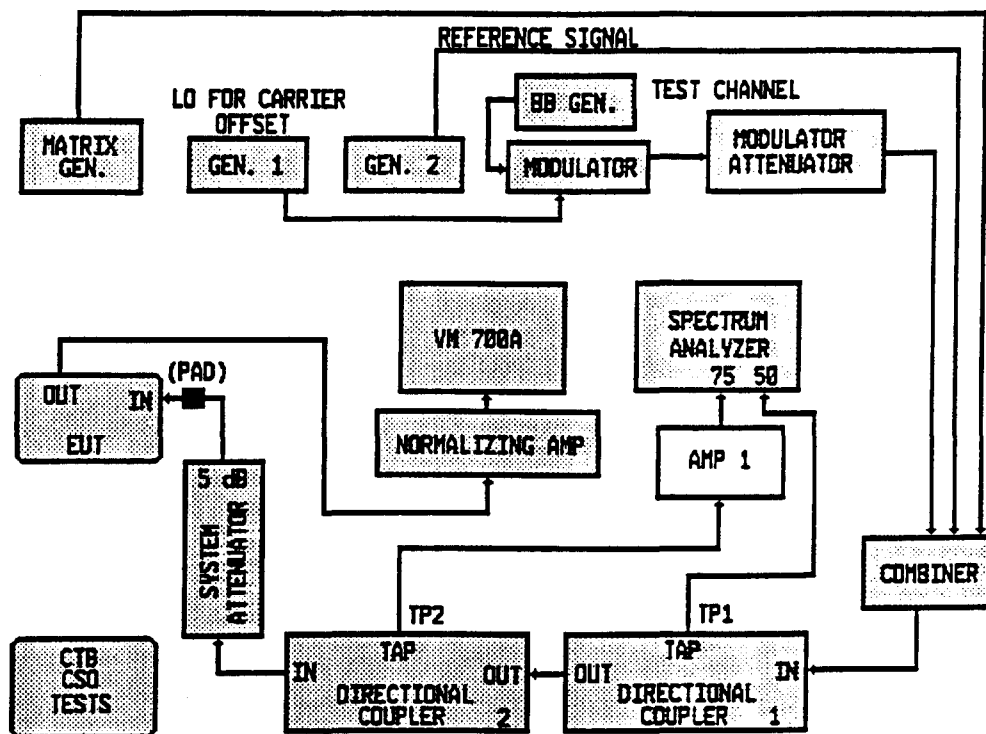


FIGURE D

TUNER OVERLOAD TEST CONFIGURATION

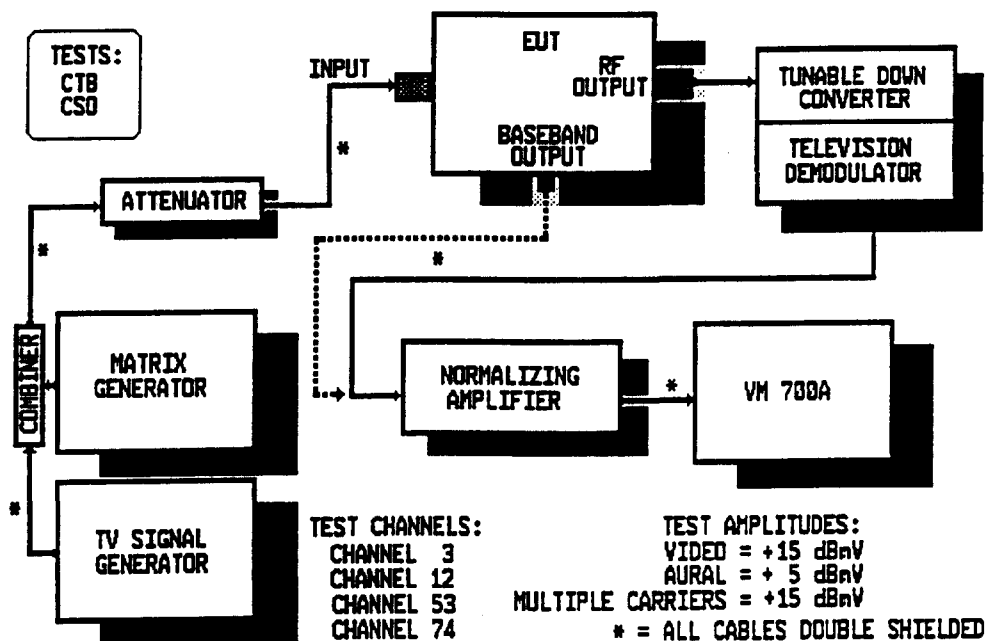


FIGURE 14